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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,102	05/19/2006	Heon Moo Kim	Q94656	5114

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EXAMINER	
KASHNIKOW, ERIK	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,102	KIM ET AL.	
	Examiner	Art Unit	
	ERIK KASHNIKOW	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/19/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-16 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 11/579,619 in view of Bastioli et al (US 5,512,378). The claims in the copending application teach all the limitations of the starch materials in Applicant's instant application. Although claims 1-13 are drawn to composition and not bowl, given that it is disclosed that the composition is "for a biodegradable starch bowl", it would have been obvious for one of ordinary skill in the art to use the composition to form a bowl as presently claimed. The copending application is silent regarding a film or sheet attached to the starch composition. Bastioli et al. teach that it is known in the art to attach biodegradable sheets to biodegradable starch package compositions (column 1

lines 5-9). One would be motivated to use this biodegradable sheet of Bastioli et al. because water barrier protection (column 1 lines 38-41).

This is a provisional obviousness-type double patenting rejection.

Claims 1-16 directed to an invention not patentably distinct from claims 1-14 of commonly assigned application 11/579,619. Specifically, see above paragraphs for details.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11/579,619, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4-8, 11, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al.(US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910), Matsuda et al. (US 6,183,596), and Kraskin et al. (US 3,954,104).

5. Bastioli et al. teach a biodegradable article comprised of a starched base material and a biodegradable film thereon (column 1 lines 5-9).

6. In regards to claims 1, 4, 14 and 15 Bastioli et al. teach that the base material comprises unmodified potato starches (column 4 lines 1-10). Bastioli teaches that the starches may be combined with polymeric materials or plasticizers (column 3 line 42 to column 4 line 21) may be added to the starch composition. Bastioli et al. teach that the starch is present in a concentration of 37% by weight (example 1). Bastioli et al. teach that water may be added to the composition in concentrations between 1 and 50% (column 4 lines 17-21). Bastioli et al. also teach a second biodegradable layer attached to the starch layer (column 6 lines 43-46). In regards to the limitation that the bowl is "prepared to have a desired shape by heating and pressurizing" Examiner is treating it as a product by process claim. It has been shown that even though product-by-process claims are limited by and defined by the process, determination of patentability is based

on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113 and *In re Thorpe,* 777F.2d 695, 698, 227 USPQ 964, 966).

7. In regards to claim 2 Bastioli et al. teach that the film comprise up to 90% polylactic acid (column 3 lines 14-15 and 25-27).

8. While Bastioli et al. teach the biodegradable article they are silent regarding the article being a bowl, however it would be obvious to one of ordinary skill in the art at the time of the invention that a bowl is a type of container or package, and one would be motivated to put the article in bowl form depending on that which the article is designed to hold.

9. While Bastioli et al. teach the biodegradable article they are silent regarding the use of mould release agents and cellulose fibers.

10. In regards to claim 1 and 12 George et al. teach a biodegradable polymer composition capable of being formed into packaging materials (column 1 lines 10-19). George et al. teaches that the compound comprises unmodified starch (column 1 lines 10-20). George et al. teach that a lubricant, specifically magnesium sterate can be added to the starch in 1-10% of the starch composition (column 9 lines 1-17). George et al. also teach fillers such as fibers being added to the composition in amounts of 20-60% which overlaps with applicant's range (column 8 lines 62-68).

11. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli et al. with that of George et al. because the invention of Bastioli et al. which offers effective liquid gas and vapor barriers (column 1 lines 5-10) would benefit from the uniform melt formation of the article of George et al.
As stated above George et al. and Bastioli et al. teach biodegradable containers comprising starch and a biodegradable film, however they are silent regarding the addition of titanium dioxide.

12. While Bastioli et al. teach the biodegradable article they are silent regarding the presence of titanium dioxide.

13. In regards to claim 7 Sanbayashi et al. teach the use of titanium dioxide which comprises some anatase (paragraph 0020) are known in the art at the time of the invention to be used in natural polymers (claim 19) such as starch (paragraph 0061) used in containers (claim 27). Sanbayashi teach that the titanium dioxide is present in 0.01-80% of the entire composition (paragraph 0035). In regards to the concentration of the anatase absent a showing of criticality with respect to "anatase concentration" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "anatase" through routine experimentation to values, including those presently claimed in order to achieve "excellent photo-chemically catalyst". It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

14. In regards to claim 8 Sanbayashi et al. teach that the titanium dioxide is doped with Platinum (paragraph 0052).

15. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli and George with that of Sanbayashi et al. because the invention of Sanbayashi et al. offers excellent industrial applicability (paragraph 0013). While Bastioli et al., George and Sanbayashi et al. teach the biodegradable article they are silent regarding the presence of a preservative.

16. In regards to claims 1 and 11 Kraskin et al. teach the use of 0.1-3% potassium sorbate (column 3 lines 35-42) as an antimycotic (preservative) in starch (column 2 lines 40-44).

17. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli George and Sanbayashi et al. with Kraskin et al. because the invention of Kraskin et al. offers resistance to fungal attacks on containers (column 1 lines 6-12).

18. As stated above Bastioli, George, Sanbayashi and Kraskin et al. teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the length of the pulp fiber material as well as the composition of the pulp fiber material.

19. Matsuda et al. teach compositions comprising pulp fibers and various starches (column 9 lines 53-60).

20. In regards to claim 5 Matsuda et al. teach that the fibers have lengths of no more than 50 μm which is within Applicant's range (column 9 lines 30-32).

21. In regards to the powder limitation of claim 1, since the same materials are taught in the same sizes as those presently claimed then the fibers would therefore also be in powder form.

22. In regards to claim 6 Matsuda et al. teach that broad leaf fibers are a preferred fiber for their invention (column 5 lines 15-24).

23. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli George and Sanbayashi et al. with Matsuda et al. because Matsuda et al. offers the ability to die, pigment or tint a cellulose product with ease (column 3 lines 9-14).

24. Claims 3, 16-24, 27, 28, 30 and 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910), Matsuda et al. (US 6,183,596) and Kraskin et al. (US 3,954,104) as applied to claim 1 above and further in view of Kuroda et al. (US 5,786,406).

25. As stated above Bastioli, George, Sanbayashi, Matsuda, and Kraskin et al. teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the thickness of the biodegradable layer, as well as the method of forming the article.

26. Kuroda et al. teach biodegradable molded articles (column 1 lines 5-10) comprising a biodegradable film.

27. In regards to claim 3 Kuroda teaches it is known in the art for biodegradable films to have a thickness of 5-200 micron which overlaps with applicants range (column 13 lines 1-10).

28. In regards to claims 16 and 19 Kuroda et al. teach that vacuum forming is a commonly used method for forming the articles of their invention (column 12 lines 36-40).

29. In regards to claims 17, 20-24, 27, 28, 30 and 31 all the limitations in the claims have been discussed above.

30. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda and Kraskin et al. with Kuroda et al. because Kuroda et al. offers ease of adjusting the films for a wide variety of uses (column 13 lines 1-3).

31. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Matsuda et al. (US 6,183,596) and Kraskin et al. (US 3,954,104) as applied to claim 1 above and in further view of Kim et al. (KR 2002028272).

32. As stated above Bastioli, George, Sanbayashi, Matsuda, and Kraskin et al. teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the inclusion of FeIII(Fe^{3+}) and silicon dioxide in the photo catalyst.

33. Kim et al. teach that a photo catalyst with the composition comprising silicon dioxide, titanium dioxide and (Fe3+) has many advantages and uses for food

containers, which one of ordinary skill in the art at the time of the invention would recognize includes bowls (Basic Abstract).

34. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda, and Kraskin et al. with Kim et al. because Kim et al. offers improved heat resistance (Basic Abstract).

35. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al.(US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Matsuda et al. (US 6,183,596) and Kraskin et al. (US 3,954,104) as applied to claim 1 above and in further view of Shogren et al. (US 6,146,573).

36. As stated above Bastioli, George, Sanbayashi, Matsuda, and Kraskin et al. teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the combination of monostearyl citrate and magnesium stearate. Shogren et al. teach the inclusion of monostearyl citrate and magnesium stearate in starch compositions to act as releasing agents. While they are silent regarding specific concentrations of the two, it has been found that absent a showing of criticality with respect to "ratios of the releasing agents" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "concentrations of the releasing agents" through routine experimentation to values, including those presently claimed in order to achieve "a concentration that works as an effective releasing agent for starch substances". It has been held that discovering an

optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

37. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda, and Kraskin et al. with Shogren et al. because Shogren et al. offers protection against problems of adhesion between the starch compositions and the molds (column 26 lines 17-20).

38. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Matsuda et al. (US 6,183,596) Kraskin et al. (US 3,954,104) and Kuroda et al. (US 5,786,406) as applied to claim 16 above and in further view of Kim et al. (KR 2002028272).

39. As stated above Bastioli et al.(US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Matsuda et al. (US 6,183,596) Kraskin et al. (US 3,954,104) and Kuroda et al. (US 5,786,406) teach a method for forming a biodegradable bowl with a biodegradable film thereon, however they are silent regarding materials used to dope the titanium dioxide.

40. In regards to claims 25 and 26 Kim et al. teach that a photo catalyst with the composition comprising silicon dioxide, titanium dioxide and (Fe3+) has many advantages and uses for food containers, which one of ordinary skill in the art at the time of the invention would recognize includes bowls (Basic Abstract).

41. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda, Kuroda, and Kraskin et al. with Kim et al. because Kim et al. offers improved heat resistance (Basic Abstract).

42. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Kraskin et al. (US 3,954,104) Matsuda et al. (US 6,183,596) and Kuroda et al. (US 5,786,406) as applied to claim 16 above and in further view of Shogren et al. (US 6,146,573).

43. As stated above Bastioli, George, Sanbayashi, Matsuda, Kraskin et al. and Kuroda et al. teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the combination of monostearyl citrate and magnesium stearate.

Shogren et al. teach the inclusion of monostearyl citrate and magnesium stearate in starch compositions to act as releasing agents. While they are silent regarding the specific concentrations of the two releasing agents it has been found that absent a showing of criticality with respect to "ratio of the releasing agents" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "ratio of the releasing agents" through routine experimentation to values, including those presently claimed in order to achieve "an effective releasing agent for starch compositions". It has been held that discovering an

optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

44. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda, Kuroda, and Kraskin et al. with Shogren et al. because Shogren et al. offers protection against problems of adhesion between the starch compositions and the molds (column 26 lines 17-20).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erik Kashnikow
Examiner
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